

## JOINT MANAGEMENT PLAN REVIEW



### DRAFT ACTION PLAN: ECOSYSTEM PROTECTION – INCORPORATING FISHING ISSUES INTO RESEARCH AND EDUCATION PLANS

**MAY 1, 2003**

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#### GOAL

To develop a program that would educate the public about fishing issues in the Sanctuary and to involve fishermen in research activities to add to the body of research available for fishery-related decision making processes.

#### BACKGROUND

##### *Fishing Activities in the MBNMS*

The commercial and recreational fishing industry constitutes a key component to the economic, historical, and cultural fabric of the region. Most fishes caught within the MBNMS are landed at one of five main ports: Princeton/Half Moon Bay, Santa Cruz, Moss Landing, Monterey Bay, or Morro Bay. More than 1,200 commercial vessels fish in the region annually, along with substantial recreational fishing (Starr et al. 2002). More than 200 species of invertebrates and fishes were caught in the commercial and recreational fisheries in this region from 1981-2000, with more than 70% of the commercial fish landings composed of market squid, Pacific sardine, rockfishes, Dover sole, northern anchovy, Chinook salmon, mackerel, albacore, and sablefish. The five primary gear types used are pots or traps, trawl nets, hook-and-line gear, purse seines, and gill or set nets. In 1997, marine fisheries for the counties of Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, and San Francisco were valued at a total of \$53 million, led by San Francisco County at more than \$19 million and Monterey County at more than \$14 million.

##### *MBNMS Fisheries Related Programs*

Current involvement of the MBNMS in issues related to fishing includes conducting fisheries-related research, sponsoring educational events, and occasionally commenting to other agencies on fishery and ecosystem management issues.

##### *Fishery Education*

In 1998, the Packard Foundation sponsored the California Sea Grant publication “Fishery Resources of the Monterey Bay National Marine Sanctuary” by Starr, Johnson, Laman, and Cailliet.<sup>1</sup> That original publication provided a summary of existing commercial and recreational fisheries, management

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<sup>1</sup> Starr, R.M., K.A. Johnson, N. Laman, and G.M. Cailliet. 1998. Fishery resources of the Monterey Bay National Marine Sanctuary. California Sea Grant College System Publication No. T-042, 102 p.

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strategies, management issues, and status of selected fisheries according to landings at the five major ports within the Sanctuary from 1980-1995.

In 2001, the Sanctuary commissioned an update of the 1998 report by Starr, Cope, and Kerr.<sup>2</sup> This new report goes beyond just providing an update of landings data through the year 2000. The different fisheries are presented using a habitat approach rather than on a species-by-species basis. Technical concepts and information that fishery scientists use to estimate the population sizes of harvested species are summarized for a general audience. A brief description of the types of fisheries operating in the region encompassed by the Sanctuary, and a summary of fishery management operations from 1981-2000 are provided. The report also provides suggestions as to why fishery landings changed over time, including changes in regulations (including gear restrictions and quotas), declines in populations, and El Niño events.

#### *Watershed Protection*

The Sanctuary has an active role in the protection of the salmon and steelhead populations of the region through preservation of the watershed habitat and water quality that sustain these species during their migration and spawning activities. This includes watershed management and outreach activities with the agricultural community, cities and counties, education of the public about salmonid life cycles and habitat threats, and citizen monitoring of water quality in streams and rivers.

#### *Collaborative Efforts with the Fishing Community*

Beginning in 2001, the MBNMS began working collaboratively with a subcommittee of the Alliance of Communities for Sustainable Fisheries to evaluate the potential benefits and drawbacks of using marine reserves to facilitate ecosystem conservation and sustainable fisheries. This subcommittee, which includes fishermen, scientists, and environmental organizations, is attempting to develop solutions, which can protect Sanctuary resources while sustaining the region's critical fishing industry. The subcommittee is attempting to provide recommendations on the issue to the California Department of Fish and Game, the Pacific Fisheries Management Council, and the Sanctuary program.

#### *MBNMS Research Program*

The primary mission of the MBNMS research program is to provide scientific information for resource protection and management. Several basic approaches to achieve this mission include 1) determining information gaps, 2) developing and participating in collaborations to study issues, and 3) interpreting research for decision makers.

#### *MBNMS Education Program*

The mission of the education program is to promote awareness, understanding, appreciation, and

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<sup>2</sup> Starr, R.M., J.M. Cope, and L.A. Kerr. 2002. Trends in Fisheries and Fishery Resources Associated with the Monterey Bay National Marine Sanctuary from 1981-2000. California Sea Grant College System Publication No. T-046, 156 p.

stewardship of the Monterey Bay National Marine Sanctuary through public education and conservation programs.

## **SHORT LIST OF STRATEGIES IN THE FISHING ISSUES ACTION PLAN**

### **Phase I (start year 1 – 2)**

- 1) Educate the public on the role of the MBNMS and agencies related to fisheries mandates, processes, approaches, and regulations
- 2) Facilitate communication among interested parties/user groups (e.g., fishermen, scientists, agencies, education groups, NGOs)
- 3) Facilitate defining and promoting sustainable fisheries
- 4) Involve fishermen and other interested parties in developing education programs and products
- 5) Facilitate the involvement of the fishing community in information collection and dissemination of fisheries relevant data in the MBNMS (e.g., stock trends, environmental data, habitat distribution, using local knowledge to design projects)

### **Phase II (start roughly in year 3 – 4)**

- 6) Facilitate the collection and dissemination of socio-economic, cultural, and historical information on fishing communities (e.g., maritime history, prehistory)
- 7) Educate the public on links between healthy ecosystems and fish stocks (e.g., impacts of pollution, healthy watersheds)

### **Phase III (Opportunistic)**

- Strategy 6, Activity B

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## **STRATEGY MB-FI -1 - EDUCATE THE PUBLIC ON THE ROLE OF THE MBNMS AND AGENCIES RELATED TO FISHERIES MANDATES, PROCESSES, APPROACHES, AND REGULATIONS**

There is confusion among the general public regarding the role of the MBNMS in fisheries issues, regulations, and mandates. Different agencies [California Department of Fish and Game (CDFG), NOAA Fisheries, Pacific Fishery Management Council (PFMC), and National Marine Sanctuary Program (NMSP)] have different responsibilities regarding fishing; sometimes they overlap, while providing different protections. The role of the MBNMS is to promote multiple uses while protecting resources, using an ecosystem approach. This Strategy will help to clarify the role of the MBNMS in fisheries issues by creating outreach materials for the public outlining the roles, responsibilities, regulations, and mandates of the MBNMS and the National Marine Sanctuary Program, and how the Sanctuary's role compares to other fisheries management agencies and non-governmental organizations.

### **RESEARCH COMPONENTS – NONE**

### **EDUCATION COMPONENTS**

***Activity A: Provide information on the MBNMS website of the roles and responsibilities of the MBNMS and National Marine Sanctuary Program in fisheries issues.***

#### ***Phase I, Step 1***

*Project status:*

*Potential partners:*

- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)

*Estimated costs:*

***Activity B: Develop an awareness campaign outlining the roles and responsibilities of the MBNMS and National Marine Sanctuary Program in fisheries issues.***

Prior to embarking on this campaign, the target audience(s) needs to be identified (e.g., Sanctuary visitors, non-visitors, local residents, families, or school children). Outreach tools will depend on the audience(s) and breadth of campaign.

#### ***Phase I, Step 2***

*Project status:*

*Potential partners:*

- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)

*Estimated costs:*

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## **STRATEGY MB-FI – 2 - FACILITATE COMMUNICATION AMONG INTERESTED PARTIES/USER GROUPS (E.G., FISHERMEN, SCIENTISTS, AGENCIES, EDUCATION GROUPS, NGOs)**

Historically, there is a lack of good communication and working relationship between the fishing community and resource (protection) managers. The MBNMS and fishing community would like to improve the communication between these groups in an effort to educate the public about fishing issues, and partner in research activities to better understand fishery resources in the MBNMS.

### **RESEARCH COMPONENTS**

***Activity A: Continue to support the “Alliance of Communities for Sustainable Fisheries” with staff (i.e., meeting coordination), to provide fishermen’s perspective to the SAC.***

Beginning in 2001, the MBNMS began working collaboratively with a subcommittee of the Alliance of Communities for Sustainable Fisheries (Alliance) to evaluate the potential benefits and drawbacks of using marine reserves to facilitate ecosystem conservation and sustainable fisheries. This subcommittee, which includes fishermen, scientists, and environmental organizations, is attempting to develop solutions, which can protect Sanctuary resources while sustaining the region’s critical fishing industry. The subcommittee is attempting to provide recommendations on the issue to the California Department of Fish and Game, the Pacific Fisheries Management Council, and the Sanctuary program.

Along with this Activity, an effort should be made to include recreational fishermen (or continue developing ways for them to be included) in the Alliance. There is also a desire of the fishing community to widen and balance membership of the Alliance (e.g., include processors).

#### ***Phase I, Step 1***

*Project status: Initiated and Ongoing*

*Potential partners:*

- Fishing organizations (e.g., Alliance)

*Estimated costs:*

***Activity B: Develop a Communication Plan between parties interested in education and research issues related to fishing in the MBNMS.***

This activity will include communicating with fishermen, California Department of Fish and Game (CDFG), NOAA Fisheries, Pacific Fishery Management Council (PFMC), and others on what the MBNMS is doing relative to fishing issues and determining the proper channels for effective communication. This activity will also include desired goals and outcomes.

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***Phase I, Step 2***

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Individual Fishermen
- Scientists
- Educators
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Pacific Marine Conservation Council (PMCC)
- NGOs
- Monterey History & Art Association/Maritime Museum of Monterey

*Estimated costs:*

***Activity C: Investigate partnership with the Pacific Marine Conservation Council's (PMCC) West Coast-wide collaborative research program (e.g., PMCC website of research needs and fishermen's assets).***

The PMCC is currently developing the first west coast-wide collaborative research program. Their goal is to be a clearinghouse for interested parties to identify research priorities, find funding, and improve communication and trust between fishermen, scientists, and fishery managers. This Activity will explore the best method for posting the types of research needed in the MBNMS on the PMCC website. Activity D (see below) will help determine the needs of the local fishing communities and research scientists.

***Phase I, Step 3***

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Pacific Marine Conservation Council (PMCC)
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)

*Estimated costs:*

***Activity D: Develop a series of meetings outlining projects with science needs using fishermen's skills and assets.***

This Activity will provide an opportunity for fishermen to help design fisheries research projects. This Activity should be targeted when there are clear needs and funding to achieve the goal(s). To achieve this Activity, the MBNMS will investigate existing cooperative research programs and inform the regional community about existing programs (See Activity C).

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***Phase I, Step 4***

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Individual Fishermen
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Pacific States Marine Fisheries Commission (PSMFC; has funding for experimental work on groundfish research and other topics)

*Estimated costs:*

***Activity E: Include special session at annual Sanctuary Integrated Monitoring Network (SIMoN) symposium (with publication to share) for collaborative research needs (See Strategy 5).***

***Phase I, Step 5***

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Scientists
- Academic institutions
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Legislative staff
- Policy makers
- NGOs

*Estimated costs:*

**EDUCATION COMPONENTS**

***Activity F: Develop an outreach program that promotes the dialogue and understanding of the multiple perspectives of fisheries and values involved.***

***Phase I, Step 6***

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)

*Estimated costs:*

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***Activity G: As part of Activity F, facilitate public forums for the general public and interested parties to understand local fisheries.***

This Activity will include fishermen, scientists, and managers as speakers at public forums to educate the general public and each other of the historical and current status, health, and practices of fisheries within the MBNMS. The development of this activity should link to Strategy 3 (Sustainable Fisheries).

***Phase I, Step 7***

*Project status:*

*Potential partners:*

- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Save Our Shores
- Monterey History & Art Association/Maritime Museum of Monterey
- NGOs

*Estimated costs:*

***Activity H: As part of Activity F, provide explanation on the MBNMS website of how fishermen can get involved in existing fishing topics, programs, and other processes within the MBNMS (e.g., Alliance activities, MPA process, contact info for local fishing representatives, Sustainable Fisheries Festival).***

***Phase I, Step 8***

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)

*Estimated costs:*

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## **STRATEGY MB-FI -3 - FACILITATE DEFINING AND PROMOTING SUSTAINABLE FISHERIES**

Fisheries resource management agencies make management decisions with the best available data, which is often limited. Fisheries around the world are often managed with less information. The fishing community within the MBNMS would like to know what information is needed to effectively and sustainably manage fisheries, what information is actually available, what data are used and how data-limited status translates into fishery regulations, and what types of data are lacking. In addition, they would like to know the causes of the discrepancy. The fishing community believes that educating the public, funding agencies, and user groups may help fill-in the gap between the creation of regulations and the paucity of data. Fishermen would like to participate in programs to collect data for fisheries management (e.g., observer and monitoring data).

The general public and fishing community would like more information to be disseminated on sustainable fisheries and practices. Information dissemination should include defining and identifying sustainable fisheries, identifying sustainable fishing techniques, and identifying the pros and cons of aquaculture. Audiences should include the general public, consumers, markets, suppliers, and fishermen. In addition, the facilitation of research on sustainable fisheries, and minimizing fishing impacts should be investigated.

### **RESEARCH COMPONENTS**

***Activity A: Facilitate the exchange of information from researchers and fishermen to programs below (Education Component Activities). Develop a web page to indicate links to different programs and other sources of information.***

#### ***Phase I, Step 1***

*Project status:*

*Potential partners:*

- Ocean Conservancy
- Institute for Fisheries Resources
- World Wildlife Fund (WWF's Community Based Certification Program)
- Marine Stewardship Council
- Monterey Bay Aquarium
- Seafood Choice Alliance

*Estimated costs:*

***Activity B: Promote research on this topic by bringing together scientists, fishing community, managers, NGOs to develop collaborative research projects (including facilitating new research on how to define and assess sustainability).***

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***Phase I, Step 2***

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Academic Institutions

*Estimated costs:*

***Activity C: Promote social science research on fishing industry perceptions of sustainability (fishermen /perception about their future); then disseminate the findings.***

***Phase I, Step 3***

*Project status:*

*Potential partners*

- Academic Institutions
- NGOs
- Consultants

*Estimated costs:*

**EDUCATION COMPONENTS**

***Activity D: Explore and implement mechanisms for reaching different audiences on existing or potential programs that identify, promote, and certify healthy fisheries on healthy choices (e.g., symposia; workshops; fishing day for families).***

***Phase I, Step 4***

*Project status:*

*Potential partners:*

- The Ocean Conservancy
- Institute for Fisheries Resources
- World Wildlife Fund (WWF's Community Based Certification Program)
- Marine Stewardship Council
- Monterey Bay Aquarium
- Seafood Choice Alliance

*Estimated costs:*

***Activity E: Explain to the public how to assess sustainability.***

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After determining the target audience(s), this outreach activity should include several topics: 1) how stock size is estimated and determined sustainable, 2) the costs and economics of fishing and not fishing sustainably, and 3) habitat sustainability. Fact sheets are suggested as an outreach tool.

***Phase I, Step 5***

*Project status:*

*Potential partners:*

- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- World Wildlife Fund

*Estimated costs:*

***Activity F: Facilitate and participate in a sustainable fishing festival (e.g., squid, albacore).***

***Phase I, Step 6***

*Project status:*

*Potential partners:*

- Monterey History & Art Association/Maritime Museum of Monterey
- Fishing organizations (e.g., Alliance)
- World Wildlife Fund
- Individual fishermen
- Monterey Bay Aquarium
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Local chefs
- Local buyers

*Estimated costs:*

## **STRATEGY MB-FI – 4 - INVOLVE FISHERMEN AND OTHER INTERESTED PARTIES IN DEVELOPING EDUCATION PROGRAMS AND PRODUCTS**

The fishing community possesses a wealth of historical fishery and at-sea knowledge that should be shared to create educational programs and products to better characterize the fishery resources, and historical and current user groups. Developing education programs and products on fishing issues should also involve other interested parties [e.g., non-governmental organizations (NGOs), scientists], to achieve the educational goals and strategies outlined in this Action Plan. The MBNMS will provide the opportunity for the fishing community (and other interested parties) to review, comment, and add sensibilities (if necessary) to documents used for educating the public about fisheries. The MBNMS working groups (e.g., RAP, SEP, CWG) will be used as a sounding board for this Strategy. The Science Writing Program and Science Illustration Program at UCSC are potential partners for all education outreach components.

### **RESEARCH COMPONENTS - NONE**

### **EDUCATION COMPONENTS**

***Activity A: Annually evaluate existing outreach efforts at Sanctuary Education Panel (SEP) meeting(s); include input from fishermen and other interested parties.***

The SEP currently meets bimonthly (every other month), reviewing program proposals, advising on educational priorities, and assisting in implementation of programs to increase understanding and stewardship of the MBNMS. To achieve the goal of this Strategy, one SEP meeting per year should be dedicated to the evaluation of the progress of existing outreach efforts that address Fishing Issues. Input from fishermen and other interested parties should be solicited and considered.

#### ***Phase I, Step 1***

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Individual fishermen
- NGOs
- SEP members/agencies

*Estimated costs:*

***Activity B: Develop and implement interpretive signage at harbors of local fishing activities.***

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The MBNMS is currently planning interpretive signage at MBNMS harbors to describe maritime history and/or site-specific fishing activities (e.g., target species, vessel types, gear types). This activity should build upon the existing MBNMS effort.

***Phase I, Step 2***

*Project status:* Planned

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Individual fishermen
- NGOs

*Estimated costs:*

***Activity C: Create exhibits at Visitor's Center.***

The MBNMS is currently involved in developing a Visitor's Center (location to be determined), and creating smaller interpretative exhibits at two existing California State Park locations (Pigeon Point Light Station and San Simeon). The Visitor's Center and/or other exhibit space should include an exhibit highlighting fishing activities in the MBNMS. The fishing community should be involved in the planning and development of the exhibit(s).

***Phase I, Step 3***

*Project status:* Planned

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Individual fishermen
- California State Parks (San Simeon District, Bay Area District)

*Estimated costs:*

***Activity D: Develop and implement education program for K-12, "Mariners in the Classroom."***

Educating the public often starts with children, who then teach their parents. In Maryland, NOAA Fisheries and the Maryland Watermen's Association have partnered to create an educational program for school children, centered around an existing maritime curriculum. "Mariners in the Classroom," is an education program for grades K-12, featuring fishermen in the classroom. Fishermen, fisheries scientists, or academics visit classrooms and present topics such as fishing techniques, natural history, biology, fisheries science, social science, and economics. Fishermen are compensated for their travel and time spent in the classroom. In addition, these visits often occur off-season. The MBNMS is exploring the implementation of a similar local program.

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***Phase II, Step 4***

*Project status:* Exploring implementation

*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Individual fishermen

*Estimated costs:*

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**STRATEGY MB-FI –5 - FACILITATE THE INVOLVEMENT OF THE FISHING COMMUNITY IN INFORMATION COLLECTION AND DISSEMINATION OF FISHERIES RELEVANT DATA IN THE MBNMS (E.G., STOCK TRENDS, ENVIRONMENTAL DATA, HABITAT DISTRIBUTION)**

The general public and fishing community would like more information about the health and trends of fishery stocks in the MBNMS. Information collection and dissemination should address biodiversity, stock abundance, landings, climatic and oceanographic cycles, and anthropogenic inputs.

Collaborative research between fishermen, researchers, and other stakeholders is currently taking place on the east and west coasts of the United States. This type of collaborative effort is for those who wish to work together and better understand the fisheries and marine ecosystems. Such a collaborative effort provides an opportunity for involved parties to add to the body of research available for fishery-related decision-making processes.

**RESEARCH COMPONENTS**

***Activity A: The MBNMS will facilitate a recurring workshop series with interested parties to determine existing management capabilities/needs, efforts, gaps, overlap, and develop a coordinated plan for collection of fisheries relevant data (includes interests beyond management or improved management).***

***Phase I, Step 1***

*Project status:*

*Potential partners:*

- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Fishing organizations (e.g., Alliance)
- Academic Institutions

*Estimated costs:*

***Activity B: The MBNMS will facilitate the development of mechanisms to implement the results from the above workshop (perhaps through subgroups of the workshop).***

***Phase I, Step 2***

*Project status:*

*Potential partners:*

- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Fishing organizations (e.g., Alliance)
- Academic Institutions

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*Estimated costs:*

***Activity C: Investigate the feasibility of developing and implementing a logbook system for recreational fishermen.***

Currently recreational fishermen are not required to submit catch information. Collecting recreational catch information, however, could increase our understanding of ecosystem health. This Activity would be a volunteer program and include training. Recreational catch data could be uploaded by fishermen at a kiosk and/or entered on a website.

***Phase I, Step 3***

*Project status:*

*Potential partners:*

- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Recreational fishing organizations (e.g., Coastside Fishing Club, Cambria Fishing Club)
- Individual recreational fishermen

*Estimated costs:*

***Activity D: Investigate the feasibility of developing and implementing a volunteer monitoring program on location-specific catch per unit effort, “staffed” by recreational fishermen.***

***Phase I, Step 4***

*Project status:*

*Potential partners:*

- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Recreational fishing organizations (e.g., Coastside Fishing Club, Cambria Fishing Club)
- Individual recreational fishermen
- Party boats

*Estimated costs:*

***Activity E: When undertaking cooperative research, the MBNMS will solicit input from fishermen in the development, synthesis, collection, and analyses of data that are collected.***

Upon implementation of this Strategy, the MBNMS will recommend that data are used in the proper context and data are used with understanding of data limitations.

***Phase I, Step 5***

*Project status:*

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*Potential partners:*

- Fishing organizations (e.g., Alliance)
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)
- Fishery scientists

*Estimated costs:*

***Activity F: The MBNMS will include fisheries relevant data in the Sanctuary Integrated Monitoring Network (SIMoN) metadata files and website.***

***Phase I, Step 6***

*Project status: Initiated*

*Potential partners:*

- Academic Institutions
- Fishing organizations (e.g., Alliance)
- Individual fishermen
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)

*Estimated costs:*

**EDUCATION COMPONENTS**

***Activity G: Identify target audience(s) in needs assessment and develop Strategy to disseminate Research Component Activities.***

***Phase I, Step 7***

*Project status:*

*Potential partners:*

- To be determined

*Estimated costs:*

## **STRATEGY MB-FI - 6 - FACILITATE THE COLLECTION AND DISSEMINATION OF SOCIOECONOMIC, CULTURAL, AND HISTORICAL INFORMATION ON FISHING COMMUNITIES (E.G., MARITIME HISTORY, PREHISTORY)**

The commercial and recreational fishing industry constitutes a key component to the economic, historical, and cultural fabric of the region. This strategy recognizes the need to better understand fisheries as they relate to prehistory, maritime history, and present day socioeconomics, and to better educate the public about these aspects of the fishing community. The Fishing Issues working group suggests that the Administration working group develop an internship program to address components of this strategy (e.g., teach people how to do oral histories). Potential partners include the Monterey History & Art Association/Maritime Museum of Monterey, and Colleges/Universities with maritime concentrations.

### **RESEARCH COMPONENTS**

***Activity A: Work with Monterey History & Art Association/Maritime Museum of Monterey to gather oral histories and photographs of fisheries and their cultural evolution (past and present) in the Monterey Bay National Marine Sanctuary. Disseminate information via Activity D.***

#### ***Phase II, Step 1***

*Project status:*

*Potential partners:*

- Monterey History & Art Association/Maritime Museum of Monterey
- Internship Program (via Administration working group)

*Estimated costs:*

***Activity B: Propose to University Library Sciences programs, to organize the Patricia Powell Frances Clark Collection currently at Moss Landing Marine Laboratories (MLML) to create a searchable database (i.e., enter document information into online catalog).***

Moss Landing Marine Laboratories (MLML) recently acquired a portion of the largest collection of historical CDFG literature, including internal CDFG reports (e.g., monthly reports), journals, rare or otherwise valuable books, and gray literature (e.g., environmental reports). The Collection needs to be entered into the online MLML/MBARI (Monterey Bay Aquarium Research Institute) research library to create a searchable database for historical fisheries research.

#### **Phase III**

*Project status:*

*Potential partners:*

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- CDFG
- Moss Landing Marine Laboratories
- Monterey Bay Aquarium Research Institute
- University Library Sciences programs
- David and Lucile Packard Foundation

*Estimated costs:*

## **EDUCATION COMPONENTS**

### ***Activity C: Support and develop closer involvement with the J.B. Phillips Historic Fisheries Symposium.***

The J.B. Phillips Historic Fisheries symposium, hosted by the Monterey History & Art Association/Maritime Museum of Monterey, is a way of perpetuating and recording the history of past and current fisheries. To do this, the Museum brings together scientists, fishermen, historians, sociologists and fish market owners in a 5-hour symposium for the public. Panelists present different facets of the scientific, commercial, and sociological impacts of one fishing industry. In the process, the audience has an opportunity to engage in interesting and enjoyable discussion with the speakers about the fishing industry and its impact on our oceans and communities. Each symposium culminates in a published fisheries report that covers the current science, culture and history. In years past, symposia have focused on the squid, abalone, sardine fisheries and this year, the Scientists of Cannery Row.

The goals and objectives of the symposium and report are: (1) to introduce to the general public the history of the fisheries and fisheries science of the Monterey Bay; (2) to raise public awareness about the historical, economical and political importance of the fisheries in Monterey Bay; and (3) to give the public an opportunity to discuss these issues with scientists, policy makers, historians, and fishermen in a non-academic framework.

Supporting and closely participating in the annual symposium may create a larger awareness of the local, historical fisheries.

### ***Phase II, Step 2***

*Project status:*

*Potential partners:*

- Monterey History & Art Association/Maritime Museum of Monterey

*Estimated costs:*

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***Activity D: Work with Monterey History & Art Association/Maritime Museum of Monterey to develop, circulate, and/or display education materials (e.g. book, pamphlet, video, poster) of fisheries and their cultural evolution (past and present) in the Monterey Bay National Marine Sanctuary. Collect information via Activity A.***

**Phase II, Step 3**

*Project status:*

*Potential partners:*

- Monterey History & Art Association/Maritime Museum of Monterey

*Estimated costs:*

***Activity E: Educate the public on the conservation efforts of fishermen in terms of self-regulation, fishermen-developed regulations, and oil spill response.***

The fishing community has an interest in not only making a living off the sea, but also conserving it for the long-term. This trait often goes unnoticed. The fishing community would like to be acknowledged for their conservation contributions, and educate the public on several instances of their efforts. These efforts include self-regulation, the creation of regulations suggested by fishermen, and participation and training in oil spill response. To develop this Activity, the target audience(s) and main messages will be determined. The use of multimedia in the development and dissemination of the messages developed will be explored.

**Phase II, Step 4**

*Project status:*

*Potential partners:*

- Fishing organizations (e.g., Alliance)

*Estimated costs:*

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## **STRATEGY MB-FI – 7 – OUTREACH TO THE PUBLIC ON LINKS BETWEEN HEALTHY ECOSYSTEMS AND FISH STOCKS (E.G., IMPACTS OF POLLUTION, HEALTHY WATERSHEDS)**

The decreasing trends in fish stocks are not always solely attributed to fish harvesting. There are many aspects that contribute to ecosystem health and stock size. This strategy recognizes the need to identify impacts to ecosystems including fish harvesting, pollution, and watershed health.

### **RESEARCH COMPONENTS**

***Activity A: Sanctuary Currents Symposium to focus on coastal water quality issues, including how it influences fisheries.***

#### **Phase II, Step 1**

*Project status:*

*Potential partners*

- Academic Institutions
- NGOs
- Sea Grant
- Fishing organizations (e.g., Alliance)

*Estimated costs:*

***Activity B: Facilitate an assessment of what is known about the links between ecosystems and fisheries (contract for a report/literature review).***

This Activity will focus on Sanctuary resources. Threat to resources other than fishing will be identified. The following topics will be investigated: 1) Salinas River and Salmon, 2) regime shifts, 3) positive and negative sides of agriculture, and 4) the influence of water quality.

#### **Phase II, Step 2**

*Project status:*

*Potential partners:*

- Academic Institutions
- NGOs
- Sea Grant
- Fishing organizations (e.g., Alliance)

*Estimated costs:*

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## **EDUCATION COMPONENTS**

***Activity C: Add ecosystem components/information to interpretive signage on wharfs (include fisher related to ecosystem info).***

### **Phase II, Step 3**

*Project status:*

*Potential partners:*

- Academic Institutions
- Fishing organizations (e.g., Alliance)
- Individual fishermen
- NGOs
- Sea Grant

*Estimated costs:*

***Activity D: Using information from Activity A (above), develop strategies to disseminate to target audiences (i.e., schools, adults, users, appropriate connections with the Water Quality Protection Program).***

### **Phase II, Step 4**

*Project status:*

*Potential partners:*

- Academic Institutions
- NGOs
- Sea Grant
- Fishing organizations (e.g., Alliance)
- Monterey Bay Aquarium
- Fisheries management agencies (e.g., CDFG, NOAA Fisheries, PFMC)

*Estimated costs:*

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## ABBREVIATIONS USED IN FISHING ISSUES ACTION PLAN

Alliance: Alliance of Communities for Sustainable Fisheries

CDFG: California Department of Fish and Game

CWG: Conservation Working Group (MBNMS)

MBARI: Monterey Bay Aquarium Research Institute

MBNMS: Monterey Bay National Marine Sanctuary

MLML: Moss Landing Marine Laboratories

NGOs: Non-governmental organizations

NMSP: National Marine Sanctuary Program

NOAA: National Oceanic and Atmospheric Administration

PFMC: Pacific Fishery Management Council

PMCC: Pacific Marine Conservation Council

PSMFC: Pacific States Marine Fisheries Commission

RAP: Research Activities Panel (MBNMS)

SEP: Sanctuary Education Panel (MBNMS)

SIMoN: Sanctuary Integrated Monitoring Network (MBNMS)

UCSC: University of California Santa Cruz

WWF: World Wildlife Fund

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